

WHAT IS CLAIMED:

1. A method of controlling a turbine/alternator comprising a gas driven turbine and permanent magnet alternator on a common shaft comprising:

providing electric power to said turbine/alternator through an inverter circuit to start said turbine/alternator to achieve self-sustained operation of said turbine/alternator;

reconfiguring said inverter circuit to output electric power from said turbine/alternator when self-sustained operation of said turbine/alternator is achieved; and

supplying the electric power to a power line while monitoring said power line.

2. The method of claim 1, wherein the voltage of said power line is monitored when monitoring said power line.

3. The method of claim 2, wherein the phase of the power line voltage is monitored when monitoring said power line, and the electric power to be supplied is synchronized with the phase of the power line voltage.

4. The method of claim 2, wherein the amplitude of the power line voltage is monitored when monitoring said power line, and the electric power to be supplied is adjusted to facilitate the transfer of power to the power line.

5. The method of claim 1, wherein during providing electric power to said turbine/alternator, controlled combustion of fuel and air is provided to said gas driven turbine of said turbine/alternator.

6. The method of claim 1, wherein when reconfiguring said inverter circuit, said inverter circuit is connected to said turbine/alternator through a rectifier.

7. The method of claim 1, wherein said inverter circuit comprises an output filter for filtering said electric power, and said output filter is removed when providing electric power to said turbine/alternator through said inverter circuit.

8. An electric system for a turbine/alternator comprising a gas driven turbine and permanent magnet alternator on a common shaft, said permanent magnet alternator being connectable to a power line, comprising:

an inverter provided for operation of said turbine/alternator;

means to provide electric power to said turbine/alternator through said inverter to start said turbine/alternator to achieve self-sustained operation of said turbine/alternator;

means to reconfigure said inverter to output electric power from said permanent magnet turbine/alternator to supply the electric power to said power line; and

a monitor circuit to monitor said power line.

9. The electric system of claim 8, wherein said monitor circuit is adapted to monitor the voltage of said power line.

10. The electric system of claim 9, wherein said monitor circuit is adapted to monitor the phase of the voltage of said power line, and said means to reconfigure said inverter is adapted to output the electric power synchronized to the phase of the power line voltage.

11. The electric system of claim 8, wherein said monitor circuit is adapted to monitor the amplitude of the voltage of said power line, and said means to reconfigure said inverter is adapted to adjust the output electric power to facilitate the transfer of power to said power line.

12. The electric system of claim 8, further comprising means to provide controlled combustion of fuel and air to said gas driven turbine to achieve self-sustained operation of said gas driven turbine.

13. The electric system of claim 8, wherein said means to reconfigure said inverter connects said inverter to said turbine/alternator through a rectifier.

14. The electric system of claim 8, wherein said means to reconfigure said inverter is adapted to supply electric power to said power line at a common line voltage and frequency.

15. The electric system of claim 8, further comprising an output filter for filtering said electric power, which output filter is removable when said means to provide electric power provides electric power to said turbine/alternator.